

REMARKS/ARGUMENTS

Claims 1-4, 6-8, 10-14, 16-18, 20-24, 26-28, and 30 are pending in the application. Claims 1, 7, 11, 17, 21, and 27 have been amended. Claims 5, 9, 15, 19, 25, and 29 have been cancelled. Reconsideration is respectfully requested. Applicants submit that the pending claims 1-4, 6-8, 10-14, 16-18, 20-24, 26-28, and 30 are patentable over the art of record and allowance is respectfully requested of claims 1-4, 6-8, 10-14, 16-18, 20-24, 26-28, and 30.

Applicants would like to thank Examiners Gaffin and Radtke for holding a telephone interview with their representative, Janaki K. Davda, on July 13, 2006 at 5:00 p.m. (EST). Proposed claim amendments to claims 1 and 7 and the rejections under 35 U.S.C. 101, 112, and 102(e) were discussed. In particular, Applicants' representative discussed each of the amended limitations of claims 1 and 7 with reference to the 101 and 112 rejection. With reference to the 102(e) rejection, Applicants' representative submitted that the Thusoo patent at Col. 8, lines 1-45, describes joining a source and destination table to form a result set and inserting rows from the result set to the destination table or updating rows in the destination table with rows in the result set. Applicants representative submitted that such processing does not anticipated the amended claims, for example, the automatic re-application of the input duplicates to the first structure by removing the input duplicates from the first structure and applying the input duplicates to matching original rows in the first structure. The Examiner Radtke indicated that the 112 rejections appeared to be overcome by the amendments. No other agreement was reached.

The Abstract of the disclosure is objected to because it is longer than one paragraph. Applicants have amended the Abstract to overcome the objection.

Claims 17-18 are objected to because of informalities. Applicants have amended claims 17-18 to overcome the objections.

Claims 1, 5-8, 11, 15-18, 21, and 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended certain claims.

As to claims 1, 7, 11, 17, 21, and 27, the use of the word "structure" is considered vague by the Examiner. It is unclear to the Examiner if the structures are subsets of the rows and columns in a table or if they are tables themselves. Applicants respectfully traverse.

MPEP Section 2106, subheading Claims Particularly Pointing Out and Distinctly Claiming the Invention, recites that "the applicant need not explicitly recite in the claims every feature of the invention." Thus, Applicant is not required to recite a specific structure. However, to clarify the claims and expedite prosecution, Applicants have amended claims 1, 11, and 21 to recite that the first structure is an output table. In claims 1, 11, and 21, the second structure stores input duplicates. Applicants' respectfully submit that they are not required to explicitly recite a particular type of structure. However, merely to provide an example of a structure, Applicants' direct the Examiner's attention to page 10, paragraph 33, which indicates that duplicate input rows may be in a duplicates list.

In claims 7, 17, and 27, the first structure stores index entries, the second structure stores input duplicates, and the third structure stores discarded input rows. Again, Applicants' respectfully submit that they are not required to explicitly recite a particular type of structure. Merely to provide examples of structures, Applicants' direct the Examiner's attention to page 13, paragraph 42, which describes that a sorted index entries structure may be a list and to page 21, paragraph 69, which describes that a sorted index entry structure may be an array. Also, merely as another example of a structure, Applicants' direct the Examiner's attention to page 10, paragraph 33, which indicates that duplicate input rows may be in a duplicates list.

As to claims 1, 11, and 21, the last step of "processing the index entries" is considered vague by the Examiner. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 1, 11, and 21. In particular, claims 1, 11, and 21 have been amended to recite merging unique index entries from the index entries stored in the second structure to a primary key index.

As to claims 7, 17, and 27, the last step of "reapplying" is considered vague by the Examiner. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 7, 17, and 27. In particular, claims 7, 17, and 21 have been amended to recite automatically reapplying input duplicates and discarded input rows for which data is stored

in the second structure to the output table by removing the input duplicates from the output table and applying the input duplicates and the discarded input rows to matching original rows in the output table.

As to claims 7, 17, and 27, the first step of "loading one or more input rows . . . wherein . . . discarded input rows are stored in a third structure" is considered vague by the Examiner because there is no prior step that determines which input rows are to be discarded. The Examiner also submits that there is insufficient basis for the phrase "discarded input rows" because no rows have been marked as discarded. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 7, 17, and 27. In particular, under MPEP Section 2106, subheading Claims Particularly Pointing Out and Distinctly Claiming the Invention, which recites that "the applicant need not explicitly recite in the claims every feature of the invention," Applicants' respectfully submit that they are not required to explicitly recite determining which input rows are to be discarded. However, to clarify the claims, Applicants' have amended claims 7, 17, and 27 to describe that the discarded input rows are input rows that are rejected based on a condition.

As to claims 8, 18, and 28, the second step of "applying conditions" is considered vague by the Examiner. Applicants respectfully traverse. Applicants' Specification, as part of the "Background of the Invention", on page 6, paragraph 21, describes:

in some cases, inserts/updates may need to be performed when certain conditions are met, otherwise, the input row may be rejected. For example, a condition for an optimized UPSERT operation may be: "UPSERT those rows where the sum of the existing value of B and the input value of B does not exceed 5".

Applicants respectfully submit that such conditions, as well as the application of the conditions, are known in the background art. Applicants request the Examiner to read claims 8, 18, and 28 in light of the Specification, rather than reading "applying conditions" as "conditionally deleting", which was not described in the Specification.

As to claims 5-6, 15-16, and 25-26, there is insufficient antecedent basis for the limitation of "the output table". Claims 5, 15, and 25 have been cancelled, and the rejection is moot as to these claims. Claims 6, 16, and 26 depend from claim 1, which recites "an output table". Therefore, there is sufficient antecedent basis for the limitation "the output table" in claims 6, 16, and 26.

Claims 11 and 17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 11 and 17. In particular, Applicants have amended claims 11 and 17 to recite an article of manufacture comprising one of hardware logic implementing logic and a computer readable storage medium. Applicants' Specification, page 22, paragraph 73, describes that the "term 'article of manufacture' as used herein refers to code or logic implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.) or a computer readable medium, such as magnetic storage medium (e.g., hard disk drives, floppy disks, tape, etc.), optical storage (CD-ROMs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, firmware, programmable logic, etc.)."

Claims 1, 7, 11, 17, 21, and 27 are rejected under 35 U.S.C. 101 because they do not produce a tangible results, and thus, are non-statutory. Applicants respectfully traverse.

As to claims 1, 11, and 21, the final step of "processing the index entries" is considered vague by the Examiner. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 1, 11, and 21. In particular, Applicants' have amended the final limitation to recite merging unique index entries from the index entries stored in the second structure to a primary key index. Applicants' submit that such a merger merges index entries into the primary key index and so produces a tangible result.

As to claims 7, 17, and 27, the step of "automatically reapplying . . . to the output table" is considered to produce no tangible result by the Examiner. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 7, 17, and 27 to recite automatically reapplying input duplicates and discarded input rows for which data is stored in the second structure to the output table by removing the input duplicates from the output table and applying the input duplicates and the discarded input rows to matching original rows in the output table. Applicants' submit that such removal of input duplicates and application of the input duplicates and the discarded input rows to matching original rows in the output table produces a tangible result.

Claims 1-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Thusoo et al. (U.S. Patent No. 7,016,903). Applicants respectfully traverse.

Anticipation requires that the identical invention must be shown in a single reference in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that the Thusoo patent does not show the identical invention in as complete detail as is contained in the claims.

Claims 1, 11, and 21 describe receiving multiple input rows to be loaded into a first structure, wherein the first structure is an output table (e.g., Specification, page 12, paragraphs 40-41). Each input row of the multiple input rows is processed to classify each input row as one of an insert row and an update row, wherein input duplicates are appended to the first structure and index entries for the input duplicates are stored in a second structure (e.g., Specification, page 12, paragraph 41; FIG. 5A, block 512). After the multiple input rows have been processed, the input duplicates are automatically re-applied to the first structure by removing the input duplicates from the first structure and applying the input duplicates to matching original rows in the first structure (e.g., Specification, page 13, paragraph 43; FIG. 5B, blocks 522, 524) and unique index entries from the index entries stored in the second structure are merged to a primary key index (e.g., Specification, page 13, paragraph 43; FIG. 5, block 518).

Claims 7, 17, and 27 describe loading one or more input rows into an output table, wherein input duplicates are appended to the output table, index entries for the input rows are stored in a first structure and discarded input rows are stored in a third structure, wherein the discarded input rows are input rows that are rejected based on a condition (e.g., Specification, page 18, paragraph 60; FIG. 7A, blocks 714-722). Periodically, the loading of the one or more input rows is interrupted to perform an index merge, wherein input duplicates for which corresponding index entries in the first structure are not added to an index are stored in a second structure (e.g., Specification, page 18, paragraph 61; FIG. 7B, blocks 724-728). It is determined whether to add data for one or more discarded input rows in the third structure to the second structure and, when it is determined that the data for one or more discarded input rows in the third structure are to be added to the second structure, the data for the discarded input rows is added to the second structure (e.g., Specification, page 19, paragraphs 62-63; FIG. 7B, blocks 730-732). Automatically, input duplicates and discarded input rows for which data is stored in the second structure are reapplied to the output table by removing the input duplicates from the

output table and applying the input duplicates and the discarded input rows to matching original rows in the output table (.g., Specification, page 20, paragraph 66; FIG. 7D, blocks 742, 744).

On the other hand, the Thusoo patent describes that to process the source table 305 and integrate it with destination table 310, the data warehouse 300 may completely join the two tables together. . . and the result of the outer join step is preferably a result set 340 (Col. 8, lines 1-11). Once result set 340 has been compiled, each row in result set 340 may be processed such that the row is either inserted into destination table 310 or the row provides an update to a corresponding row in destination table 310 (Col. 8, lines 32-36).

Applicants respectfully submit that the Thusoo patent does not anticipate the subject matter of claims 1, 7, 11, 17, 21, and 27. For example, the Thusoo patent does not describe that input duplicates are appended to the first structure and that there is automatic re-application of the input duplicates to the first structure by removing the input duplicates from the first structure and applying the input duplicates to matching original rows in the first structure.

Dependent claims 2-4, 6, 8, 10, 12-14, 16, 18, 20, 22-24, 26, 28, and 30 incorporate the language of one of independent claims 1, 7, 11, 17, 21, and 27 and add additional novel elements. Therefore, dependent claims 2-4, 6, 8, 10, 12-14, 16, 18, 20, 22-24, 26, 28, and 30 are not anticipated by the Thusoo patent for at least the same reasons as were discussed with respect to claims 1, 7, 11, 17, 21, and 27.

Conclusion

For all the above reasons, Applicants submit that the pending claims 1-4, 6-8, 10-14, 16-18, 20-24, 26-28, and 30 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0460.

The attorney of record invites the Examiner to contact her at (310) 553-7973 if the Examiner believes such contact would advance the prosecution of the case.

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